Biennial Report to the Vermont General Assembly
Pursuant to
30 V.S.A. § 8004(f)

by the
Vermont Public Service Board

December 2007

Background

Public Act 61, passed in 2005, was an omnibus energy bill that included sections designed to promote the development of renewable energy in Vermont.[1] The Act also requires that the Public Service Board ("Board") provide a biennial report on various issues related to renewable energy and Vermont's power supply to the Senate Committee on Finance, the Senate Committee on Natural Resources and Energy, the House Committee on Commerce, and the House Committee on Natural Resources and Energy.[2] In Section 8004(f) of Title 30 the Legislature articulated nine issues for the Board to address. The following is the Board's analysis of the nine issues.

(1) The total cumulative growth in electric energy usage in Vermont from 2005 through the end of the year that precedes the date on which the report is due.

From January 1, 2005 to December 31, 2006, state-wide energy usage increased by approximately 0.79 percent.[3] Attached as Appendix 2 is a table that provides the amount of energy sold by each utility for the years 2004 through 2006.[4]

Each Vermont utility was requested to provide estimates of its anticipated load growth. These estimates range from about 0.06% per year to 1% per year. A weighted average of the Vermont utilities' load growth projections results in a Vermont composite estimate of future load growth of 0.47% per year.

The accuracy of the utilities' projections of future load growth may be significantly affected by the uncertainty regarding the impact of increased investment in energy efficiency. Vermont has increased investment in energy efficiency from $17.5 million dollars per year in 2005 to $30.75 million dollars per year in 2008. Given the increased investments in energy efficiency measures, it is anticipated that, rather than continuing trends in load growth, there may not be any growth in electricity usage in 2008 and after.

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[1]Those portions of Public Law 61 concerning renewable energy in general, and the SPEED program in particular, are incorporated into 30 V.S.A.§§ 8001, 8002, 8004, and 8005, which are attached as Appendix 1.

[2]30 V.S.A. § 8004(f).

[3]The statute focuses on electric energy usage of customers rather than capacity of generating units. Electric usage is expressed in terms of kilowatt-hours or megawatt-hours.

[4]It appears that Vermont experienced approximately one percent growth in electrical usage for several years preceding 2005. This resulted in total electrical energy use in Vermont for 2004 of 5,748,434 MWh, which is the baseline for calculating load growth under the statute.

(2) A report on the market for tradeable renewable energy credits, including the prices at which credits are being sold.

A renewable energy credit ("REC") is designed to capture the renewable attributes of electricity that is produced. The attributes that make electricity renewable can be sold separately from the power itself, and these renewable attributes are sold in the form of a REC, which represents one MWh. RECs are commonly used to measure a utility's progress in meeting a Renewable Portfolio Standard ("RPS"). Every New England state except Vermont has some form of RPS, although the primary REC markets have been those in Massachusetts and Connecticut. The price for RECs is driven not only by supply and demand, but also is subject to relevant state statutes.

There are different classes of RECs; for example, Connecticut has three classes:

- Class I includes renewable projects that come online after July 1, 2003;
- Class II includes run-of-the-river hydroelectric facilities that began operation prior to July 1, 2003; and
- Class III includes combined heat and power systems that came on-line after January 1, 2006.

In 2007, Connecticut Class I RECs and Massachusetts "new" RECs traded for approximately $50 per MWh. By contrast, Connecticut Class II RECs had a value of approximately $0.60 per MWh. It is expected that prices for Connecticut Class I and Massachusetts "new" RECs will decline over the next several years to a value of approximately $40 - $45 per MWh, due to the expected increase in the number of renewable energy projects built over that time period.

As can be seen, the value of RECs for renewable generation units varies significantly according to when the facility came on-line. These price differences reflect the greater value assigned to new renewable sources in the renewable trading programs of other states. For example, Washington Electric Cooperative, Inc. sold its RECs associated with the Coventry landfill gas project, which came on-line in 2005, for $47 per MWh in 2006. By contrast, the Village of Swanton Electric Department sold its RECs for its hydroelectric facilities, which have been in place for decades, for $0.055 per MWh in 2006.

The Department of Public Service ("Department") has reported to the Board that there is some concern within the New England region that the Sustainably Priced Energy Enterprise Development ("SPEED") program creates a requirement analogous to an RPS, but without any of the associated costs or burdens on the utilities. In particular, other states have raised concerns that the SPEED structure mimics an RPS, while simultaneously relieving utilities of the obligation to hold environmental attributes of the resources or make representations about the

renewable qualities of these resources in their resource portfolio (as with an RPS). As a result, some prospective developers have raised concern that the SPEED program has the effect of creating a disincentive for project developers seeking to locate in Vermont because of uncertainty as to how neighboring states with an active RPS program may respond and whether RECs from projects in Vermont will have any value.

We consider these concerns about the SPEED program to be misplaced; the SPEED program is a requirement that is separate and distinct from an RPS. In contrast to an RPS program which requires utilities to purchase renewable resources and hold their attributes to retirement, the SPEED program was designed to create incentives for in-state construction of generation projects and encourage Vermont utilities to engage in power contracts with renewable project developers. In fact, it was specifically designed so that utilities did not need to acquire RECs, thereby allowing prospective developers to obtain revenues both from power contracts and from the sale of attributes to finance potential projects. Because of this design, the SPEED program is compatible with an RPS; Vermont utilities are free to hold and make representations about these resources in connection with their portfolio or green pricing programs only to the extent that they hold the renewable attributes associated with those resources. Nevertheless, because of the on-going concerns raised in other states, it is important to recognize that the current structure of the SPEED requirements may actually be creating disincentives for the construction of renewable resources in Vermont.

(3) A report on the SPEED program, and any projects using the program.

The SPEED requirements were added in 2005 as part of Act 61. These provisions were intended to establish incentives for the construction of in-state renewable energy generation projects and promote contracts between the Vermont electric distribution utilities and renewable energy generators. The Act 61 changes achieved this goal in two ways: broadly through the requirements that created direct incentives for utilities to acquire power from renewable energy sources and more narrowly through directives to the Board to establish a program aimed at meeting the statutory goals.

The overarching objectives of the SPEED provisions were achieved by allowing Vermont's utilities to avoid having an RPS take effect in 2013 if a significant amount of renewable development occurred by 2012. Thus, the RPS would not take effect if (1) the Vermont electric distribution utilities meet total, incremental statewide growth in electric energy usage between January 1, 2005, and January 1, 2012, through new renewable resources or (2) the growth in electric usage for that time period is not met but the amount of new renewable resources exceeds 10 percent of total statewide electricity usage for calendar year 2005.[5] Act 61 requires the Board to evaluate, by July 1, 2012, whether the Vermont utilities have reached these

[5] 30 V.S.A. § 8004(b).

goals.[6] The statute allows this goal to be met through new, in-state renewable resources defined as qualifying SPEED resources,[7] or through contracts between Vermont electric distribution utilities and new renewable resources located outside of Vermont.[8]

Act 61 required the Board to establish "the regulations and procedures that are necessary to allow the public service board and the department of public service to implement, and to supervise further the implementation and maintenance of the SPEED program."[9] In 2006, the Board promulgated Rule 4.300 to implement this statutory mandate.[10]

Under 30 V.S.A § 8005(b)(1), Vermont utilities are encouraged to enter into contracts for new renewable energy that are at a price that is "anticipated to be below the long-term market price over the lives of the projects."[11] The Board has embodied this concept in the rule and has been actively encouraging stably-priced, long-term contracts to provide ratepayers the benefit of stability in their rates. The Board has not, however, seen this concept included in any contracts for purchase from SPEED resources. For example, the recent UPC Wind project in Sheffield was indexed to the market price of power (albeit at a slight discount), rather than meeting the statutory objective.[12] The Board has begun taking steps to address this concern, conditioning approval of the UPC Wind project upon the developer making all reasonable efforts to negotiate a long-term, stably-priced contract with Vermotn utilities.[13] The Board also initiated a broad-based discussion with numerous parties regarding why long-term sustainably-priced contracts have not materialized.

To provide an additional incentive for utilities to contract directly with generators, Rule 4.300 establishes a SPEED facilitator to assist in identifying and procuring SPEED resources and to encourage the formation of contracts between Vermont utilities and the owners of SPEED projects. The SPEED facilitator also has the ability to purchase SPEED resources on behalf of the Vermont utilities, but under the rule, the SPEED facilitator is the purchaser of last resort. It is not necessary for Vermont utilities to work through the SPEED facilitator to develop qualifying SPEED resources or contracts with new renewable projects.

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[6]For the purposes of the statute, new renewable projects must have come into service after December 31, 2004. *See* 30 V.S.A. § 8002(4).

[7]30 V.S.A. § 8002(5).

[8]30 V.S.A. § 8005(d)(2).

[9]30 V.S.A. § 8005(e).

[10]A copy of the rule is attached as Appendix 3 to this report.

[11]30 V.S.A. § 8005(b)(3).

[12]The East Haven that the Board did not approve had the same "index-to-market" feature.

[13]If the developer is unable to negotiate such an agreement, the Board allowed the developer to file a statement explaining why an agreement could not be reached and why the Board should modify or remove this requirement.

In October of 2006, the Board issued a Request for Proposals for a "SPEED facilitator." VEPP Inc.[14] was the only bidder and was awarded the contract to act as the SPEED facilitator on April 2007.

The activities of the SPEED facilitator have primarily focused on meeting and explaining the SPEED program to potential renewable energy developers and to the power planners of the Vermont utilities responsible for meeting SPEED goals. To assist with that function, VEPP Inc. has developed a SPEED website (www.vermontspeed.com). In addition to its work directly involving the SPEED program, the SPEED facilitator also participates as a non-voting member of the Vermont System Planning Committee.[15]

The SPEED facilitator has not, to date, been involved directly in procuring SPEED resources. So far, the SPEED resources under active development have been large, utility-scale wind or biomass projects. The developers of these projects are knowledgeable regarding the value of their projects and are active in promoting their projects directly to the Vermont utilities. This is consistent with the Board's intent in designing the SPEED program to have the primary responsibility for contracting with developers rest with the utilities and rely upon the SPEED facilitator only when utilities fail to contract with cost-effective resources.

As described below, the qualifying SPEED resources that have been built have an estimated annual energy output of 75,000 MWh. Additional Qualifying SPEED resources with an estimated annual energy output of 118,000 Mwh have been approved by the Board, but as of this date, have not been built. Finally, there are two projects pending before the Board that would provide approximately 200,000 MWh annually of Qualifying SPEED resources if granted certificates of public good pursuant to 30 V.S.A. § 248. The following is specific information regarding existing and proposed qualifying SPEED resources. We note that the first two of these (Coventry Landfill and Cow Power) were initiated prior to the enactment of Act 61.

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[14]VEPP Inc. is the Purchasing Agent appointed by the Board, pursuant to Board Rule 4.100. That rule was originally established to implement provisions of the federal Public Utilities Regulatory Policies Act of 1978 which required utilities to purchase power from small, renewable power producers located in a utility's service territory at that utility's avoided cost. Under Rule 4.100, power from these projects is purchased by VEPP Inc. and allocated to all Vermont utilities based on each utility's pro-rata share of state retail sales.

[15]The Vermont System Planning Committee ("VSPC") is an outgrowth of concerns raised by the Board in its review of the Vermont Electric Company's Northwest Reliability Project about the adequacy of transmission planning in Vermont and, in particular, the full consideration of alternatives to constructing transmission lines during the planning process. To examine this issue, the Board opened Docket 7081. The VSPC was established pursuant to a Memorandum of Understanding among many parties in that docket. The VSPC is designed to facilitate and support consideration of non-transmission alternatives to reliability problems in the state and to encourage public participation in the selection of solutions to reliability problems.

One of the first Qualifying Resources to come on-line was the Coventry Landfill gas-to-energy project developed by Washington Electric Cooperative, Inc. This project, which is adjacent to the Coventry Landfill, uses treated landfill gas to fuel four reciprocating engines producing about 50,000 MWh per year.

Central Vermont Public Service Corporation's ("CVPS") Cow Power projects are particularly noteworthy. CVPS has offered a "green pricing" rate to its ratepayers. It has used the additional revenue from the green pricing program to subsidize four projects at Vermont farms which digest cow manure to produce methane gas and use the methane gas to fire 200-600 kW generators. The Cow Power projects have provided multiple benefits to the Vermont farms, including an additional farm income stream from the electricity produced and a source for high quality animal bedding. Some of these generators have also begun to utilize food waste in the digester system.

Project Name	**Type**	**Annual Output (MWh)**
Operating projects		
Coventry Landfill gas-to energy	landfill gas	50,000
North Hartland Hydroelectric	hydroelectric	17,000
Blue Spruce Farm	farm methane	1,300
Green Mountain Dairy	farm methane	1,820
Montague Farm	farm methane	1,400
Berkshire Cow Power	farm methane	3,500
	total	75,020
Projects approved by the Board but not yet operating		
Ethan Allen Cogeneration	biomass	2,580
Boucher BioPower	farm methane	3,500
UPC Wind	wind	111,900
	total	117,980
Projects currently before the Board		
Deerfield Wind	wind	120,000

McNeil installation of catalytic reduction system[16]	emissions retrofit	87,000
	total	207,000
	TOTAL	**400,000**

A number of other potential renewable projects that could be qualifying SPEED resources are under development. These include:

- A natural gas-fired plant that is capable of burning biodiesel is being proposed by the Village of Swanton Electric Department in conjunction with the Vermont Public Power Supply Authority and has filed for a Certificate of Public Good with the Board. The project is designed as a peaking unit, and therefore the number of hours that it would run each year might be limited. Additionally, the percentage of time that the facility would burn biodiesel, rather than natural gas, is not currently known.[17]
- A landfill gas generation facility at the Moretown landfill that would have a capacity of 2.6 MW.[18]
- A biomass generation unit in Ludlow that would have a capacity of approximately 30 MW.
- A solar program by the City of Burlington Electric Department which would subsidize the installation of solar-photovoltaic panels on the roofs of existing buildings. When aggregated, these individual solar installations may qualify as a qualifying SPEED resource.
- Finally, there has been some interest by Grandpa's Knob Windpark, LLC in developing a wind generation facility at Grandpa's Knob in Castleton, Vermont. The Board recently granted a certificate of public good to erect two wind measurement towers at the site. It is unclear if or when a petition to construct a wind generation facility at the site would be filed.

The utilities have projected load growth at approximately 0.47% per year. If this level of

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[16]This does not reflect the existing power output from McNeil, but only the increased output arising from the retrofit.

[17]This project may qualify partially as a SPEED resource, depending upon the percentage power that is generated using biodiesel and the content of the biodiesel fuel.

[18]At this time, the capacity of the project, as measured by megawatts, is known. However, it is not known how much energy (*i.e.*, MWh) would be produced from these facilities. This is a function of both capacity and the number of hours that the facility operates.

growth occurs, the SPEED goal for January 1, 2012, would be approximately 180,000 MWh. If load growth is reduced below the rate the utilities project (as is expected due to the increase in the energy efficiency expenditures), the goal would be less. Based on these estimates, it appears that Qualifying Speed Resources in Vermont will exceed the SPEED goal in 2012. However, this assertion assumes that the UPC wind generation project in Sheffield recently approved by the Board is constructed prior to 2012 and the load growth estimates are accurate.

It is also important to note that the increased spending on energy efficiency ordered by the Board could reduce Vermont's load growth to zero, thereby requiring no SPEED resources to meet this goal.

(4) A summary of other contracts held or projects developed by Vermont retail electricity providers that are likely to be eligible under the provisions of subsection 8005(d) of this title.

Section 8005(d) includes two classes of projects. The first class are qualifying SPEED resources, which are defined as new in-state renewable projects. These projects were described in section 3 of this report. The second class of projects are those new renewable projects located outside of Vermont but with some portion of their output under contract to Vermont electric distribution utilities. This section of the report only addresses this latter class of projects.

At this time, there are no projects in this subcategory. But, the City of Burlington Electric Department ("BED") is negotiating a power purchase agreement with Russell Biomass in Russell, Massachusetts. The Russell Biomass plant has a capacity of 50 MW. BED is considering purchasing 15 MW of capacity, energy, and RECs.

(5) An estimate of potential effects on rates, economic development and jobs, if the target established in subsection 8005(d) of this section is met, and if it is not met.

The statute establishing the SPEED program requires contract prices to be at or below anticipated long-run market prices. In general, this should mean that the development of these projects should not result in an increase in rates because the price is below the market price. Nonetheless, it is possible that, in limited instances, SPEED resources could displace other, more cost-effective energy sources; it is unlikely that even then there would be an adverse affect on rates as the SPEED projects are small in size and the utility could resell the displaced power at a profit. Moreover, depending on the size and number of projects built, development of SPEED projects could result in a lowering of rates for some utilities. This has happened to date. For example, the Coventry landfill gas project has provided WEC's ratepayers with power at prices well below-market, even before consideration of the revenues from the sale of RECs. Additionally, to the extent that Vermont electric distribution utilities enter into contracts with renewable projects for stably priced terms, ratepayers will see increased stability in their rates.

The development of renewable energy generators has contributed to economic stability for Vermont businesses in some areas. For example, the farm-methane projects provide increased economic stability for the farms building the generation units, thereby promoting the agricultural industry in Vermont. Additionally, Ethan Allen furniture and Vermont Electric Cooperative, Inc. have jointly developed a cogeneration project at Ethan Allen's plant in Beecher's Falls. The plant produces electricity using waste wood from Ethan Allen's manufacturing process. The project was funded in part by community block grants from Vermont and New Hampshire. The farm-methane projects and the Ethan Allen project have helped to retain Vermont jobs.

Construction and operation of any in-state generation source brings jobs to Vermont. According to estimates from UPC Vermont Wind, LLC, the project in Sheffield is estimated to provide over 100 jobs during the construction phase of the project and three to five jobs post-construction.

The statute requires the Board to address the potential impacts if the SPEED goal is not met. At this time, it appears unlikely that such an event would occur. Failure to meet the goal would have two consequences. First, the RPS under Section 8004 would take effect. This would require each utility to have sufficient renewable resources to meet the standard and to hold or acquire RECs. Depending on the market for RECs, this could have a negative rate impact. Second, in the absence of in-state SPEED resources, the state would obviously lose the benefits addressed above associated with these projects.

(6) An assessment of the supply portfolios of Vermont retail electricity providers, and the resources available to meet new supply requirements likely to be triggered by the expiration of major power supply contracts.

The two major supply resources in Vermont are Hydro-Québec and Vermont Yankee. The electric utilities' contracts with Hydro-Quebec will phase out over a period of several years, with the largest contract ending in 2015. Vermont utilities' contracts with Vermont Yankee will terminate in 2012. These two sources supply approximately two-thirds of Vermont's power, with Vermont Yankee providing approximately 273 MW of Vermont load and Hydro-Québec providing approximately 310 MW of Vermont load.

In addition, the Vermont utilities receive approximately 74 MW of power from Qualifying Facilities, which are renewable generation units that came on-line in the past twenty years and are priced according to Board Rule 4.100. These contracts have termination dates beginning in 2008, with the contract for the largest qualifying facility in terms of energy output, the 20 MW Ryegate wood chip plant, ending in 2012.

An important characteristic of the Hydro-Québec and Vermont Yankee contracts is that they provide for baseload power. The only large-scale renewable project that has currently

received a certificate of public good from the Board is the UPC Wind project, which provides intermittent power. The in-state renewable baseload projects approved to date consist of farm-methane projects (2 MW collectively) and the Coventry project (6.4 MW). There has been some indication that a biomass plant with a capacity of approximately 30 MW will be proposed in Ludlow sometime in the spring of 2008. However, even if this project is approved and the number of farm-methane projects doubles, it is unlikely that sufficient in-state, baseload, renewable power could be developed within the necessary time frame to provide the amount of energy received under the HydroQuebec and Vermont Yankee contracts.

The Vermont electric distribution utilities are currently reviewing options to renew long-term contracts with Vermont Yankee and Hydro-Québec or replace these contracts with long-term power purchase agreements with other large generation suppliers. In addition, some Vermont utilities are participating in a study to examine the strengths and weaknesses of the transmission system and determine areas where different types of generation might be viable. Most utilities have recently submitted Integrated Resource Plans ("IRPs") in which they analyze their resource portfolio needs. The Board and Department will be reviewing these plans, including the utilities assessment of replacement options.

(7) An assessment of the energy efficiency and renewable energy markets and recommendations to the legislature regarding strategies that may be necessary to encourage the use of these resources to help meet upcoming supply requirements.

In 2005, Act 61 lifted the statutory cap on the Energy Efficiency Utility ("EEU") budget and directed the Board to "realize all reasonably available, cost-effective energy efficiency savings."[19] In response, the Board increased the EEU budget from the statutory cap of $17.5 million in 2005 to $19.5 million in 2006, $24 million in 2007, and $30.75 million in 2008. The efficiency measures installed as a result of this budget increase will help decrease load growth in the state, and it is possible that, after the EEU has ramped-up to the increased budget level, the efficiency measures could curtail load growth completely or even reduce load.

The Board is also looking more broadly at long-term planning issues to more effectively integrate energy efficiency into planning. As discussed above, the Board has established a process to ensure better coordination of energy efficiency in VELCO's process for assessing transmission system needs. In addition, the Board has established an effort to assess the best structure for the EEU.

The current experience also suggests an active renewable energy market in the state. As described above, several renewable projects have come on line. The Board has also reviewed and approved several other projects; a number of others are under review or being seriously considered by developers.

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[19] 30 V.S.A. § 209(d)(4).

The energy efficiency programs and SPEED requirements represent reasonable strategies for the future. The number of Qualifying SPEED Resources that have come on-line and the curtailment in load growth due to the increased spending on energy efficiency measures, leads the Board to conclude that it is likely that the state will meet the requirements of 30 V.S.A. § 8005(d). Moreover, the SPEED program has been in operation for only a short amount of time. As a result, at this time, the Board has no additional recommendations on strategies to help meet upcoming supply requirements with additional renewables.

(8) Any recommendations for statutory change related to this section, including recommendations for rewarding utilities that make substantial investments in SPEED resources.

Given the short period of time that has passed since the creation of the SPEED program, the Board does not have any recommendations regarding the program itself at this time. In addition, as explained above, the development of SPEED projects is now moving ahead so that additional resources are expected to exceed load growth through 2012. For this reason, the Board does not believe that specific incentives to encourage SPEED resource investment are needed.

(9) The board's recommendations on how the state might best continue to meet the goals established in section 8001 of this title, including whether the state should meet its growth in energy usage over the succeeding 10 years by a continuation of the SPEED program.

Act 61 determined that renewable generation should play an important role in Vermont's resource supply mix. Renewable energy provides fuel diversity and could result in more stable energy prices. There has been an increase in the number of renewable energy projects being developed over the past few years. These projects should be able to meet the goals established by Act 61.

However, at this time, the SPEED program has been in place for only one year. Given that the SPEED program extends until 2012, an assessment as to whether to continue the SPEED program should be deferred until further information regarding the program's results has been gathered.

Appendix 1
Relevant Statutes from Public Act 61

§ 8001. Renewable energy goals

(a) The general assembly finds it in the interest of the people of the state to promote the state energy policy established in section 202a of this title by:

(1) Balancing the benefits, lifetime costs, and rates of the state's overall energy portfolio to ensure that to the greatest extent possible the economic benefits of renewable energy in the state flow to the Vermont economy in general, and to the rate paying citizens of the state in particular.

(2) Supporting development of renewable energy and related planned energy industries in Vermont, in particular, while retaining and supporting existing renewable energy infrastructure.

(3) Providing an incentive for the state's retail electricity providers to enter into affordable, long-term, stably priced renewable energy contracts that mitigate market price fluctuation for Vermonters.

(4) Developing viable markets for renewable energy and energy efficiency projects.

(5) Protecting and promoting air and water quality by means of renewable energy programs.

(6) Contributing to reductions in global climate change and anticipating the impacts on the state's economy that might be caused by federal regulation designed to attain those reductions.

(b) The public service board shall provide, by order or rule, the regulations and procedures that are necessary to allow the board and the department of public service to implement and supervise programs pursuant to this chapter. (Added 2003, No. 69, § 1, eff. June 17, 2003; amended 2005, No. 61, § 1.)

§ 8002. Definitions

For purposes of this chapter:

(1)(A) "Renewable pricing" shall mean an optional service provided or contracted for by an electric company:

(i) under which the company's customers may voluntarily either:

(I) purchase all or part of their electric energy from renewable sources as defined in this chapter;

or

(II) cause the purchase and retirement of tradeable renewable energy credits on the participating customer's behalf; and

(ii) which increases the company's reliance on renewable sources of energy beyond those the electric company would otherwise be required to provide under section 218c of this title.

(B) Renewable pricing programs may include, but are not limited to:

(i) contribution-based programs in which participating customers can determine the amount of a contribution, monthly or otherwise, that will be deposited in a board-approved fund for new renewable energy project development;

(ii) energy-based programs in which customers may choose all or a discrete portion of their electric energy use to be supplied from renewable resources;

(iii) facility-based programs in which customers may subscribe to a share of the capacity or energy from specific new renewable energy resources.

(2) "Renewable energy" means energy produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate.

(A) For purposes of this subdivision (2), methane gas and other flammable gases produced by the decay of sewage treatment plant wastes or landfill wastes and anaerobic digestion of agricultural products, byproducts, or wastes shall be considered renewable energy resources, but no form of solid waste, other than agricultural or silvicultural waste, shall be considered renewable.

(B) For purposes of this subdivision (2), no form of nuclear fuel shall be considered renewable.

(C) For purposes of this chapter, the only energy produced by a hydroelectric facility to be considered renewable shall be from a hydroelectric facility with a generating capacity of 200 megawatts or less.

(D) After conducting administrative proceedings, the board may add technologies or technology categories to the definition of "renewable energy," provided that technologies using the following fuels shall not be considered renewable energy supplies: coal, oil, propane, and natural gas.

(3) "Existing renewable energy" means all types of renewable energy sold from the supply portfolio of a Vermont retail electricity provider that is not considered to be from a new renewable energy source.

(4) "New renewable energy" means renewable energy produced by a generating resource coming

into service after December 31, 2004. This may include the additional energy from an existing renewable facility retrofitted with advanced technologies or otherwise modified or expanded to increase the kwh output of the facility. If the production of new renewable energy through retrofitting involves combustion of the resource, the system must result in an incrementally higher level of energy conversion efficiency or significantly reduced emissions. For the purposes of this chapter, renewable energy refers to either "existing renewable energy" or "new renewable energy."

(5) "Qualifying SPEED resources" means contracts for in-state resources in the SPEED program established under section 8005 of this title that meet the definition of new renewable energy under this section, whether or not renewable energy credits are attached.

(6) "Nonqualifying SPEED resources" means contracts for in-state resources in the SPEED program established under section 8005 of this title that are fossil fuel-based, combined heat and power (CHP) facilities that sequentially produce both electric power and thermal energy from a single source or fuel. In addition, at least 20 percent of a facility's fuel's total recovered energy must be thermal and at least 13 percent must be electric, the design system efficiency (the sum of full load design thermal output and electric output divided by the heat input) must be at least 65 percent, and the facility must meet air quality standards established by the agency of natural resources.

(7) "Energy conversion efficiency" means the effective use of energy and heat from a combustion process.

(8) "Tradeable renewable energy credits" means all of the environmental attributes associated with a single unit of energy generated by a renewable energy source where:

(A) those attributes are transferred or recorded separately from that unit of energy;

(B) the party claiming ownership of the tradeable renewable energy credits has acquired the exclusive legal ownership of all, and not less than all, the environmental attributes associated with that unit of energy; and

(C) exclusive legal ownership can be verified through an auditable contract path or pursuant to the system established or authorized by the public service board or any program for tracking and verification of the ownership of environmental attributes of energy legally recognized in any state and approved by the board.

(9) "Retail electricity provider" means a company engaged in the distribution or sale of electricity directly to the public. (Added 2003, No. 69, § 1, eff. June 17, 2003; amended 2005, No. 61, § 2.)

§ 8004. Renewable portfolio standards for sales of electric energy

(a) Except as otherwise provided in section 8005 of this title, in order for Vermont retail electricity providers to achieve the goals established in section 8001 of this title, no retail electricity provider shall sell or otherwise provide or offer to sell or provide electricity in the state of Vermont without ownership of sufficient energy produced by renewable resources as described in this chapter, or sufficient tradeable renewable energy credits that reflect the required renewable energy as provided for in subsection (b) of this section. In the case of members of the Vermont Public Power Supply Authority, the requirements of subsection (b) of this section may be met in the aggregate through all requirements contracts pursuant to section 4002a of this title, or in the aggregate otherwise as approved by the board.

(b) Each retail electricity provider in Vermont shall provide a certain amount of new renewable resources in its portfolio. Subject to subdivision 8005(d)(1) of this title each retail electricity provider in Vermont shall supply an amount of energy equal to its total incremental energy growth between January 1, 2005 and January 1, 2012 through the use of electricity generated by new renewable resources. The retail electricity provider may meet this requirement through eligible new renewable energy credits, new renewable energy resources with renewable energy credits still attached, or a combination of those credits and resources. No retail electricity provider shall be required to provide in excess of a total of 10 percent of its calendar year 2005 retail electric sales with electricity generated by new renewable resources.

(c) The requirements of subsection (b) of this section shall apply to all retail electricity providers in this state, unless the retail electricity provider demonstrates and the public service board determines that compliance with the standard would impair the provider's ability to meet the public's need for energy services after safety concerns are addressed, at the lowest present value life cycle cost, including environmental and economic costs.

(d) The public service board shall provide, by order or rule, the regulations and procedures that are necessary to allow the public service board and the department of public service to implement and supervise further the implementation and maintenance of a renewable portfolio standard.

(e) In lieu of, or in addition to purchasing tradeable renewable energy credits to satisfy the portfolio requirements of this section, a retail electricity provider in this state may pay to a renewable energy fund established by the public service board an amount per kilowatt hour as established by the board. As an alternative, the board may require any proportion of this amount to be paid to the energy conservation fund established under subsection 209(d) of this title.

(f) Before December 30, 2007 and biennially thereafter through December 30, 2013, the public service board shall file a report with the senate committees on finance and on natural resources and energy and the house committees on commerce and on natural resources and energy. The report shall include the following:

(1) the total cumulative growth in electric energy usage in Vermont from 2005 through the end of the year that precedes the date on which the report is due;

(2) a report on the market for tradeable renewable energy credits, including the prices at which credits are being sold;

(3) a report on the SPEED program, and any projects using the program;

(4) a summary of other contracts held or projects developed by Vermont retail electricity providers that are likely to be eligible under the provisions of subsection 8005(d) of this title;

(5) an estimate of potential effects on rates, economic development and jobs, if the target established in subsection 8005(d) of this section is met, and if it is not met;

(6) an assessment of the supply portfolios of Vermont retail electricity providers, and the resources available to meet new supply requirements likely to be triggered by the expiration of major power supply contracts;

(7) an assessment of the energy efficiency and renewable energy markets and recommendations to the legislature regarding strategies that may be necessary to encourage the use of these resources to help meet upcoming supply requirements;

(8) any recommendations for statutory change related to this section, including recommendations for rewarding utilities that make substantial investments in SPEED resources; and

(9) the board's recommendations on how the state might best continue to meet the goals established in section 8001 of this title, including whether the state should meet its growth in energy usage over the succeeding 10 years by a continuation of the SPEED program. (Added 2003, No. 69, § 1, eff. June 17, 2003; amended 2005, No. 61, § 3; 2005, No. 208 (Adj. Sess.), § 14.)

§ 8005. Sustainably priced energy enterprise development (SPEED) program

(a) In order to achieve the goals of section 8001 of this title, there is created the Sustainably Priced Energy Enterprise Development (SPEED) program. The SPEED program shall have two categories of projects: qualifying SPEED resources and nonqualifying SPEED resources.

(b) The SPEED program shall be established, by rule, order, or contract, by the public service board by January 1, 2007. As part of the SPEED program, the public service board may:

(1) name one or more entities to become engaged in the purchase and resale of electricity generated within the state by means of qualifying SPEED resources or nonqualifying SPEED

resources;

(2) allow the developer of a facility that is one megawatt or less, and is a qualifying SPEED resource or a nonqualifying SPEED resource, to sell that power under a long term contract that is established at a specified margin below the hourly spot market price;

(3) encourage Vermont's retail electricity providers to secure long-term contracts for renewable energy that are anticipated to be below the long-term market price, over the lives of the projects. The board may create a competitive bid process through which to select a portion of those contracts;

(4) maximize the benefit to rate payers from the sale of renewable energy credits or other credits that may be developed in the future, especially with regard to the projects approved under subdivision (3) of this subsection;

(5) encourage retail electricity provider sponsorship and partnerships in the development of renewable energy projects;

(6) make available to Vermont retail electricity providers for purchase through the SPEED program, on a pro rata basis, a specified portion of the power generated under subdivisions (2) and (3) of this subsection. A retail electricity provider that chooses not to purchase a pro rata share of power generated under subdivision (3) of this section must establish, to the satisfaction of the board, that the purchase would impair the provider's ability to meet the public's need for energy services after safety concerns are addressed at the lowest present value life cycle cost, including environmental and economic costs;

(7) establish a method for Vermont retail electrical providers to obtain beneficial ownership of the renewable energy credits associated with any SPEED projects, in the event that a renewable portfolio standard comes into effect under the provisions of section 8004 of this title;

(8) create a mechanism by which a retail electricity provider may establish that it has a sufficient amount of renewable energy, or resources that would otherwise qualify under the provisions of subsection (d) of this section, in its portfolio so that equity requires that the retail electricity provider be relieved, in whole or in part, from requirements established under subdivision (6) of this subsection that would require a retail electricity provider to purchase SPEED power;

(9) provide that in any proceeding under subdivision 248(a)(2)(A) of this title, a demonstration of compliance with subdivision 248(b)(2) of this title, relating to establishing need for the facility, shall not be required if the facility is a SPEED resource and if no part of the facility is financed directly or indirectly through investments, other than power contracts, backed by Vermont electricity ratepayers; and

(10) take such other measures as the board finds necessary or appropriate to implement SPEED.

(c) Developers of qualifying and nonqualifying SPEED resources shall be entitled to classification as an eligible facility under 10 V.S.A. chapter 12, relating to the Vermont Economic Development Authority.

(d)(1) The public service board shall meet on or before January 1, 2012, open a proceeding, and issue findings determining the amount of qualifying SPEED resources that have come into service or are projected to come into service during the period of time between January 1, 2005 and January 1, 2013. If the board finds that the amount of qualifying SPEED resources coming into service during that time exceeds total statewide growth in electric energy usage during the period of time between January 1, 2005 and January 1, 2012, or if it finds that the amount of qualifying SPEED resources exceeds 10 percent of total statewide electric energy usage for calendar year 2005, the portfolio standards established under this chapter shall not be in force. The board shall make its determination by July 1, 2012. If the board finds that the goal established has not been met, one year after the board's determination the portfolio standards established under subsection 8004(b) of this title shall take effect.

(2) For the purposes of the determination to be made under this subsection, electricity produced at all facilities owned by or under long-term contract to Vermont retail electricity providers, whether it is generated inside or outside Vermont, that is new renewable energy shall be counted in the calculations under subdivision (d)(1) of this section.

(e) By no later than September 1, 2006, the public service board shall provide, by order or rule, the regulations and procedures that are necessary to allow the public service board and the department of public service to implement, and to supervise further the implementation and maintenance of the SPEED program. These rules shall assure that decisions with respect to certificate of public good applications for SPEED resources shall be made in a timely manner.

(f) In order to encourage joint efforts on the part of regulated companies to purchase power that meets or exceeds the SPEED standards and to secure stable, long-term contracts beneficial to Vermonters, the board may establish standards for pre-approving the recovery of costs incurred on a SPEED project that is the subject of that joint effort. (Added 2005, No. 61, § 4; amended 2005, No. 208 (Adj. Sess.), § 15.)

Appendix 2
kWh Usage by Electric Utility

kWh Usage by Electric Utility

Utility	*2004 kWh*	*2005 kWh*	*2006 kWh*	*% Change 2004-2005*	*% Change 2005-2006*	*% Change 2004-2006*	
Barton	14,956,083	15,226,320	14,988,177	1.81%	-1.56%	0.21%	
Burlington	353,054,000	368,278,948	359,268,266	4.31%	-2.45%	1.76%	
CVPS	2,241,677,000	2,318,700,000	2,284,465,000	3.44%	-1.48%	1.91%	
Citizens	83,296,000			-100.00%		-100.00%	*Note 1*
Enosburg	22,343,555	23,138,309	22,733,653	3.56%	-1.75%	1.75%	
GMP	1,969,925,000	2,008,252,000	1,961,042,000	1.95%	-2.35%	-0.45%	
Hardwick	31,941,883	32,584,463	31,730,312	2.01%	-2.62%	-0.66%	
Hyde Park	11,625,683	11,967,537	11,572,065	2.94%	-3.30%	-0.46%	
Jacksonville	5,460,288	5,313,201	5,228,600	-2.69%	-1.59%	-4.24%	
Johnson	15,266,535	15,478,575	15,007,078	1.39%	-3.05%	-1.70%	
Ludlow	49,736,106	50,778,335	48,681,015	2.10%	-4.13%	-2.12%	
Lyndonville	69,801,000	71,772,284	70,993,531	2.82%	-1.09%	1.71%	
Morrisville	45,084,425	45,371,493	45,565,424	0.64%	0.43%	1.07%	
Northfield	27,536,610	27,933,185	28,472,344	1.44%	1.93%	3.40%	
Orleans	14,507,201	13,979,851	13,209,071	-3.64%	-5.51%	-8.95%	
Readsboro	2,294,817	2,399,100	2,298,034	4.54%	-4.21%	0.14%	
Rochester	6,249,838	6,370,219	4,242,565	1.93%	-33.40%	-32.12%	*Note 2*
Stowe	61,738,578	65,553,278	66,927,566	6.18%	2.10%	8.40%	
Swanton	55,800,408	53,165,146	51,312,511	-4.72%	-3.48%	-8.04%	
VEC	382,028,000	476,609,516	468,476,165	24.76%	-1.71%	22.63%	*Note 1*
VT. Marble	216,856,852	224,157,616	219,234,256	3.37%	-2.20%	1.10%	
WEC	67,244,000	68,790,742	68,545,345	2.30%	-0.36%	1.94%	
Total	5,748,423,862	5,905,820,118	5,793,992,978	2.74%	-1.89%	0.79%	

Note 1 - Citizens was purchased by VEC in 2004

Note 2 - Rochester was purchased by CVPS in 2006

Appendix 3
Board Rule 4.300